

***Sent Via Email***

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**PROPOSAL FOR NEVADA ENVIRONMENTAL RESPONSE TRUST  
2018 INITIAL BUDGET**

Dear Mr. Jay Steinberg, Mr. Andy Steinberg, and Mr. Steve Clough:

**1.0 Introduction**

Ramboll US Corporation ("Ramboll") is pleased to provide this initial scope of work and budget estimate for anticipated consulting services in 2018 pertaining to the Nevada Environmental Response Trust ("NERT" or the "Trust") Site in Henderson, Nevada. The proposed scope of work is based on our recent discussions with you and our current understanding of the Trust's needs and the associated anticipated level of effort to complete the proposed tasks. We appreciate the opportunity to provide continued service to the Trust and look forward to working with you in 2018.

**1.1 Organization**

This proposal is organized into the following Sections.

- Section 1.0 provides an introduction and the organization of this document;
- Section 2.0 summarizes 2017 approved tasks that have rollover budgets for work to be completed in 2018;
- Section 3.0 summarizes new budgets for continuing tasks;
- Section 4.0 summarizes new 2018 tasks; and
- Section 5.0 provides detailed budget estimates for each task presented in Sections 3.0 and 4.0.

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Table 1 below summarizes the tasks in this proposal and indicates which section of this proposal each task is described.

<b>TABLE 1: SUMMARY OF TASKS</b>			
<b>Task</b>	<b>Title</b>	<b>Section of Proposal</b>	<b>Initial 2018 Budget</b>
General Site Operations			
F03	Site Management Plan	3 – Continuing Task	\$34,000
F04	Consent Agreement Scheduling and Reporting	3 – Continuing Task	\$48,000
F05A	NDEP Relations	3 – Continuing Task	\$12,000
F05B	Stakeholder Relations	3 – Continuing Task	\$150,000
Leasehold / Off-Site Operations			
G01	Sale Parcel: HRAs	3 – Continuing Task	\$115,000
G02A	Sale Parcel: Treco Coordination	2 – Rollover Task	\$113,000
G02B	Sale Parcel: Parcel E Coordination	2 – Rollover Task	\$15,000
GW & GWETS Compliance / Monitoring / Reporting			
H04	Data Verification and Management	3 – Continuing Task	\$282,000
H05	Data Evaluation and Reporting	3 – Continuing Task	\$563,000
H07	Monitoring Well Repairs	3 – Continuing Task	\$145,000
H08	Database Management, Maintenance, and Accessibility	3 – Continuing Task	\$262,000
GWETS Compliance and Reporting			
J02	Permit Compliance and Reporting	3 – Continuing Task	\$143,000
J03	GWETS Data Management and Evaluation	3 – Continuing Task	\$118,000
Remedial Investigation Planning / Strategy (NERT Lead)			
L01	Community Involvement	3 – Continuing Task	\$70,000
L09	Weir Dewatering Treatment: NPDES Permit Compliance	3 – Continuing Task	\$48,000
Remedial Investigation Implementation (NERT Lead)			
M01	Soils Investigation	2 – Rollover Task	\$128,000
M03	RI Phase 2 Field Investigation	3 – Continuing Task	\$1,596,000
M06A	BHRA Work Plan Implementation	3 – Continuing Task	\$590,000
M06B	Ecological Risk Assessment	3 – Continuing Task	\$156,000
M07	Groundwater Modeling	3 – Continuing Task	\$550,000
M08	RI Data Evaluation and Reporting	3 – Continuing Task	\$1,342,000
M20	Barrier Wall Geophysical Integrity Field Evaluation Implementation	2 – Rollover Task	\$542,500
M22	RI Phase 3 Field Investigation	2 – Rollover Task	\$3,700,000
M23	Soil Background Concentration Study Implementation	4 – New Task	\$178,000

<b>TABLE 1: SUMMARY OF TASKS</b>			
<b>Task</b>	<b>Title</b>	<b>Section of Proposal</b>	<b>Initial 2018 Budget</b>
M25	AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation	4 – New Task	\$509,000
NERT Regional GW Planning / Strategy			
N02C	NERT Participation in Regional Tasks	2 – Rollover Task	\$37,000
NERT General and Ongoing Site Operations			
O05A	Cost Recovery and Allocation	3 – Continuing Task	\$40,000
Total			\$11,486,500

## 2.0 Rollover Budgets for Continuing Tasks

This section provides the scope of work for project tasks which were initiated in 2017 or earlier and are still in progress at the end of 2017 with no change in scope or increase in budget for 2018. The remaining budget in each task on December 31, 2017 (rounded to the nearest \$1,000) will be carried over as the initial budget in 2018. Rollover budget amounts provided herein are estimated and the actual budgets for each task will not exceed the previously established budgets, unless amended by the Trust. At the direction of the Trust, work in progress at the end of 2017 on the tasks in this section will continue without stoppage or delay in January 2018.

### G02 – Sale Parcel: Treco and Parcel E Coordination

Task Description: Various activities pertaining to the sale of Parcels A through H at the NERT site are in progress. The ownership of Parcels A and B has been transferred to Treco, but work is in progress on these parcels pertaining to the relocation of monitoring wells on the parcels. Parcels C, D, F, G, and H are owned by the Trust; it is understood that the ownership of these parcels will be transferred to Treco following completion of health risk assessments and obtaining “no further action” (NFA) determinations from NDEP for these parcels. Parcel E is owned by the Trust and anticipated to remain owned by the Trust; work is currently in progress to negotiate an easement for utilities and infrastructure on Parcel E and access by other parties to Parcel E. Under this task, Ramboll will provide consulting assistance on an as needed basis to the Trust pertaining to the negotiations for easements for and access to Parcel E, and the sale of the other parcels to Treco, as directed by the Trust. To better track project costs and budget status on this task, Ramboll will manage these activities using two internal subtasks, including G02A for activities pertaining to Parcels A, B, C, D, F, G, and H and G02B for activities pertaining to Parcel E. Each of these subtasks are further discussed below.

#### G02A – Sale Parcel: Treco Coordination

Task Description: Upon completion of the Sale Parcels HRA work (Task G01), it is anticipated that NDEP will issue an NFA letter for Parcels C, D, F, G, and H, at which time the Trust anticipates closing on the sale of these parcels to Treco. This scope of work includes providing consulting assistance on an as needed basis to the Trust to assist with their communications with Treco and other parties related to the sale of the parcels. In addition, work is currently in progress on Parcels A and B, as detailed below.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. This task includes a rollover budget of \$113,000 to complete one remaining subtask from the 2017 scope of work and three additional subtasks, including:

- Providing consulting assistance on an as needed basis to the Trust to assist with their communications with Treco and other parties related to the sale of the parcels; and

- Completing monitoring well development and sampling activities initiated in the second half of 2017 on Parcels A and B.
- Grading and vegetation removal in the NERT easement on Parcels A and B.
- Retrofitting of the above grade surface completions of five existing monitoring wells to flush-with-grade surface completion and surveying of the wells on Parcels A and B.

The following subtask has been removed from the 2018 scope of work for this task:

- Decommissioning of up to eight monitoring wells owned by the OSSM companies located on Parcels A and B.

Assumptions:

- The anticipated level of effort for this task is uncertain and the budget estimate for this task in 2018 is based on the budget remaining at the end of 2017. This budget estimate may need to be modified based on the nature of consulting assistance requested by the Trust.

Anticipated Schedule: Work on this task will proceed throughout the year, as directed by the Trust. There are no NDEP submittals anticipated for this task.

Budget Information: The estimated budget of \$113,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. The estimated budget includes approximately \$39,000 for well development, groundwater sampling, grading, wellhead retrofitting, surveying, analytical laboratory, and data validation subcontractor costs. No contingency has been added to the budget. It is anticipated that activities on this task may continue into 2019, depending on the schedule for the sale of the Parcels, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>G02A – Sale Parcel: Treco Coordination</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Rollover Budget
\$230,000	\$117,000	\$113,000

**G02B – Sale Parcel: Parcel E Coordination**

Task Description: The Trust is negotiating an easement for utilities and infrastructure on Parcel E and access by other parties to Parcel E. This scope of work includes providing consulting assistance on an as needed basis to the Trust to assist with their communications pertaining to the establishment of the easement.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. No subtasks have been added or removed. This task includes a

rollover budget of \$15,000 to provide continued consulting assistance on an as needed basis to the Trust pertaining to Parcel E.

Assumptions:

- The anticipated level of effort for this task is uncertain and the budget estimate for this task in 2018 is based on the budget remaining at the end of 2017. This budget estimate may need to be modified based on the nature of consulting assistance requested by the Trust.
- No travel is budgeted for this task.

Anticipated Schedule: Work on this task will proceed throughout the year, as directed by the Trust. There are no NDEP submittals anticipated for this task.

Budget Information: The estimated budget of \$15,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, depending on the schedule for the sale of the Parcels, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>G02B – Sale Parcel: Parcel E Coordination</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Rollover Budget
\$15,000	\$0	\$15,000

## **M01 – Soils Investigation**

Task Description: This scope of work includes field investigation activities as part of the original NERT Site and Off-site NERT RI Study Areas investigation to perform site characterization to address soil data gaps, obtain necessary data to conduct the BHRA and SLERA studies, and support the development and evaluation of remedial alternatives. These efforts were initiated in 2015 and will continue into 2018.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$128,000 to complete the remaining subtasks from the 2017 scope of work, including:

- Soil and grab groundwater sampling of the AP-5 pond area. Eight soil borings are anticipated to be installed in the area of the former AP-5 pond following draining, residual solids removal, and pond decommissioning. The AP-5 pond decommissioning is being conducted by Tetra Tech. Ramboll will coordinate with the Trust and Tetra Tech to

perform the AP-5 pond soils investigation sampling field task upon completion of the AP-5 Pond Closure.

- Compile field and analytical data from the AP-5 pond area and address remaining RI data compilation matters during the RI Phase 2 data evaluation being performed under project Task M08.

Assumptions:

- Tetra Tech completes the AP-5 pond decommissioning in 2018.

Anticipated Schedule: Soil and grab groundwater sampling will proceed upon the removal of the AP-5 liner and pond berms. No NDEP submittals are anticipated for this task.

Budget Information: The estimated budget of \$128,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. The proposed budget includes approximately \$50,000 for the drilling, analytical, and data validation subcontractor's roles. This work is anticipated to be completed within 2018 with no task specific rollover into 2019.

<b>M01 – Soils Investigation</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Rollover Budget
\$128,000	\$0	\$128,000

## **M20 – Barrier Wall Geophysical Integrity Field Evaluation Implementation**

Task Description: The Barrier Wall Integrity Field Evaluation Work Plan was submitted to NDEP on September 7, 2017 and approved by NDEP on October 3, 2017. The scope of work for implementation of the work plan was included in the NERT Budget Amendment 2017-01, which was submitted to NDEP on October 10, 2017 and approved by NDEP on December 8, 2017. The implementation of the study described in the work plan began with initial planning and mobilization efforts in late 2017 and will continue during 2018. This scope of work includes: 1) Conduct a geophysical survey to detect, locate and survey the top of the barrier wall; 2) Conduct a large-scale electromagnetic survey of the barrier wall using Willowstick™ technology to identify preferential flow paths below the water table; 3) Locate and drill wells for monitoring and injection of tracers; 4) Perform a tracer study by injecting tracers upgradient of the barrier wall and monitoring for tracers on the downgradient side of the barrier wall; 5) Conduct CPT testing of the barrier wall at approximately 50 locations in areas suspected of having preferential groundwater flow; and 6) Document results in the OU-1/OU-2 RI Report.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$542,500 to complete the remaining subtasks from the 2017 scope of work, including:

- Performing a geophysical survey;
- Conducting an electromagnetic survey;
- Installation of monitoring wells and performing a tracer study;
- Conducting CPT testing; and
- Documenting results of this study in the forthcoming OU-1/OU-2 RI Report.

**Assumptions:**

- Assumptions are provided in the September 29, 2017 scope of work provided to NDEP in the NERT Budget Amendment 2017-01 submitted on October 10, 2017.

**Anticipated Schedule:** Mobilization activities for the initial geophysical survey were completed in 2017. Field investigation activities are anticipated to begin in February 2018 and continue over an approximately 9-month period. Results will be incorporated into the OU-1/OU-2 RI report (under Task M08), anticipated to be submitted to NDEP in first quarter 2019. No discrete NDEP submittals are anticipated for this task.

**Budget Information:** The estimated budget of \$542,500 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. The initial 2017 budget of \$543,000, as detailed in the NERT Budget Amendment 2017-01, includes approximately \$133,000 for geophysical contractor costs; \$121,000 for utility locating, surveying, drilling, and CPT contractors; and tracer injection and monitoring costs of \$54,000. This task includes a 15% contingency on field study efforts, which will only be utilized upon Trust approval. This work is anticipated to be completed within 2018 with no task specific rollover into 2019.

<b>M20 – Barrier Wall Geophysical Integrity Field Evaluation Implementation</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Rollover Budget
\$543,000	\$500	\$542,500

## **M22 – RI Phase 3 Field Investigation**

**Task Description:** The 2018 scope of work for this task includes the ongoing implementation of the Phase 3 RI Field Investigation (Tasks RI3-1 through RI3-4) included in the Proposed Phase 3 Remedial Investigation Scope of Work and Budget Estimate, dated October 6, 2017, which was submitted to NDEP in the NERT Budget Amendment 2017-01 on October 10, 2017 and approved by NDEP on December 8, 2017. As directed by the Trust, the Phase 3 RI field investigation was initiated in November 2017. The scope of work for this task includes: 1) mobilization for field activities; 2) field investigation activities including drilling, soil sampling, and monitoring well installations; 3) well development, groundwater sampling, and hydraulic testing; and 4)



analytical laboratory testing, soil physical properties laboratory testing, and data management services. To better track project costs and budget status during the field program implementation, Ramboll will manage these activities using four internal subtasks (M22A, M22B, M22C, and M22D).

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$3,750,000 to complete the remaining subtasks from the 2017 scope of work, including:

- Mobilization for field activities;
- Field investigation implementation; and
- Analytical testing and data management.

Assumptions:

- Additional costs may be incurred if delays in access with BEC, City of Henderson, Tuscan Master Association, and Chimera Golf Club (and other organizations if necessary) impact the implementation schedule.

Anticipated Schedule: Mobilization activities and field investigation activities began during November 2017. Field investigation activities will continue over an approximately 4-month period. Results will be incorporated into the OU-1/OU-2 RI report (under Task M08), anticipated to be submitted to NDEP in the first quarter 2019. No discrete NDEP submittals are anticipated for this task.

Budget Information: The estimated budget of \$3,700,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. The initial 2017 proposed budget of \$4,250,000, as detailed in the NERT Budget Amendment 2017-01, includes approximately \$1,800,000 for drilling, surveying, and analytical subcontractors. This task includes a 15% contingency on efforts included in the October 6, 2017 scope of work, which will only be utilized upon Trust approval. This work is anticipated to be completed within 2018 with no task specific rollover into 2019.

<b>M22 – RI Phase 3 Field Investigation</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Rollover Budget
\$4,250,000	\$550,000	\$3,700,000

## N02C – NERT Participation in Regional Tasks

Task Description: As part of the ongoing RI/FS, Ramboll will continue to provide consulting support as directed by the Trust related to the ongoing investigation in the Downgradient Study Area being performed by AECOM, on behalf of NDEP.

Consulting support on this task is anticipated to include 1) review of AECOM Downgradient Study Area Work Plans and Reports; 2) technical review and evaluation of Downgradient Study Area data and results with consideration of data/results from the NERT Site, NERT Off-site Study Area, and Eastside Study Area; 3) communicating with and contributing information pertaining to the NERT Site and RI Study Areas to NDEP and AECOM; 4) providing input on the planning and implementation of RI activities and the strategic direction of the work in the Downgradient Study Area; and 5) participation in technical meetings with AECOM to discuss and evaluate data and results from the Downgradient Study Area investigation.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$30,000 to continue the subtasks described above.

### Assumptions:

- No travel is budgeted for this task.
- The anticipated level of effort for this task is uncertain and this budget estimate may need to be modified based on the nature of consulting assistance requested by the Trust on this task.

Anticipated Schedule: Work on this task will proceed throughout the year, dependent on the progress of AECOM's work in the Downgradient Study Area. No NDEP submittals are anticipated for this task.

Budget Information: The estimated budget of \$30,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed in 2018 with no task specific rollover into 2019.

<b>N02C – NERT Participation in Regional Tasks</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Rollover Budget
\$50,000	\$13,000	\$37,000

## 2.1 Summary of Rollover Budgets for Continuing Tasks

Table 2 below provides a summary of the rollover budgets for continuing tasks.

<b>TABLE 2: SUMMARY OF ROLLOVER BUDGETS FOR CONTINUING TASKS</b>				
<b>Task</b>	<b>Title</b>	<b>2017 Approved Budget</b>	<b>Anticipated 2017 Budget Used by 12/31/2017</b>	<b>2018 Rollover Budget</b>
G02A	Sale Parcel: Treco Coordination	\$230,000	\$117,000	\$113,000
G02B	Sale Parcel: Parcel E Coordination	\$15,000	\$0	\$15,000
M01	Soils Investigation	\$128,000	\$0	\$128,000
M20	Barrier Wall Geophysical Integrity Field Evaluation Implementation	\$543,000	\$500	\$542,500
M22	RI Phase 3 Field Investigation	\$4,250,000	\$550,000	\$3,700,000
N02C	NERT Participation in Regional Tasks	\$50,000	\$13,000	\$37,000
<b>Totals</b>		<b>\$5,216,000</b>	<b>\$680,500</b>	<b>\$4,535,500</b>

### 3.0 New Budgets for Continuing Tasks

This section provides the scope of work for project tasks which were initiated in 2017 or earlier and are still in progress at the end of 2017, generally for which previously approved budgets were for efforts through December 31, 2017. Therefore, while some of the tasks described herein are generally similar in scope for 2018, others require a change in scope as the work continues into 2018.

The scopes of work and budget estimates for each task in this section are based on anticipated efforts in 2018. Each task's 2018 budget estimate is provided along with the task's 2017 total approved budget and an estimate of the budget used in 2017. Detailed budget estimates are provided in Section 5.0. Unless otherwise noted, it is assumed at this time that the budgets for the project tasks in this section will not rollover into 2019. The 2019 scope of work and budget estimates will be prepared dependent upon future direction from the Trust.

At the direction of the Trust, work in progress at the end of 2017 on the tasks in this section will continue without stoppage or delay in January 2018.

#### F03 – Site Management Plan

Task Description: The Site Management Plan (SMP) provides a decision framework for the management of residual chemicals in soil and groundwater at the NERT Site. The current SMP (Revision 3, dated February 13, 2017) requires preparation and submittal of an Annual Report and preparation and submittal of annual updates/revisions to the SMP. This scope of work includes 1) tracking and recordkeeping of Ramboll site work performed under the SMP and associated SMP compliance activities; 2) completing the annual SMP certification of compliance of Ramboll site activities performed from June 1, 2017 to May 31, 2018 which are subject to SMP requirements; 3) providing assistance to the Trust for preparation and review of the *Annual Report* for submittal to NDEP; 4) associated correspondence with the Trust regarding compliance with and implementation of the SMP; and 5) preparation and submittal of the required annual update/revisions to the SMP.

Comparison to 2017: This scope of work is similar to the 2017 scope of work for this task. No subtasks have been added or removed.

#### Assumptions:

- No travel is budgeted for this task.
- It is anticipated that only a moderate level of effort will be required to update the SMP in 2018.
- This scope of work includes production and submittal of the annual update/revisions to the SMP and distribution to all Site Occupants. Consistent with previous years, the scope of work includes a minimal level of effort for responding to NDEP comments on this deliverable.

**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2018, with the following NDEP deliverables to be prepared:

- First Quarter 2018: SMP, Revision 4
- Third Quarter 2018: 2017-2018 SMP Annual Report

**Budget Information:** Based on this scope of work, the estimated budget for this task is the same as 2017 at \$34,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>F03 – Site Management Plan</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$34,000	\$12,000	\$34,000

#### **F04 – Consent Agreement Scheduling and Reporting**

**Task Description:** This scope of work includes tracking the completion of project tasks and submittal of project deliverables against established schedules, and modification of task and deliverable schedules as appropriate. Specifically, this scope of work includes 1) on an approximately quarterly basis as directed by the Trust, reviewing and updating the project's Gantt chart RI/FS schedule and providing the updated schedule information to the Trust; 2) tracking the progress of project deliverables and reviewing and updating the project deliverables schedule; 3) on a quarterly basis, preparing and providing to the Trust a 12-month project billing (cash flow) forecast; and 4) reviewing on a high-level other BMI Complex facilities documentation.

**Comparison to 2017:** The scope is generally consistent with that of 2017 with an anticipated increased level of effort in 2018 due to the growing size of the project compared to 2017 and prior years. No subtasks have been added. Subtasks removed include 1) organizing documents for the NERT Site and other BMI Complex facilities and classifying and filing the documents into an established document repository for project staff use; and 2) preparing project status update reports, as needed.

**Assumptions:**

- No travel is budgeted for this task.

**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2018, with project schedule and cash flow information provided to the Trust on a quarterly basis. No NDEP submittals are anticipated for this task.

**Budget Information:** Based on this scope of work and the anticipated increased level of effort in 2018, the estimated 2018 budget for this task is \$48,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>F04 – Consent Agreement Scheduling and Reporting</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$34,000	\$34,000	\$48,000

### **F05A – NDEP Relations**

**Task Description:** Ramboll will prepare for and participate in various project status update calls with the Trust during 2018. This effort will include agenda updates and preparation for and participation in bi-weekly status update calls with the Trust.

**Comparison to 2017 Subtasks:** No subtasks have been added. The effort above has been changed from *weekly* to *bi-weekly* status update calls with the Trust, and the following subtask from 2017 was removed from the 2018 scope of work: 1) Attendance on calls with NDEP, as requested by the Trust.

The labor effort on this task anticipated in 2018 has been significantly reduced from that in 2017, based on the efficiencies gained in 2017 in providing project updates to the Trust.

**Assumptions:**

- This task does not include any travel, including attendance at any in-person meetings with the Trust and/or NDEP; and
- Up to two hours of staff time every other week is included for agenda updates and preparation for and participation in bi-weekly calls.

**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2018. No NDEP submittals are anticipated for this task.

**Budget Information:** Based on this scope of work, the estimated 2018 budget for the task is \$12,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>F05A – NDEP Relations</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$92,000	\$15,000	\$12,000

## **F05B – Stakeholder Relations**

Task Description: Ramboll will prepare for and attend various project status update and technical calls/meetings with the Trust and Stakeholders during 2018. This effort will include 1) in-person attendance at the two-day Annual Stakeholders Meeting in Las Vegas and a one-day preparatory meeting with the Trust in Henderson; 2) participation in three two-hour Quarterly Stakeholder Calls, 3) in-person attendance at two one-day Stakeholder Technical Roundtable Meetings in Las Vegas, including one meeting pertaining to the OU-1/OU-2 RI data evaluation; 4) preparation of visuals, presentation slides and associated meeting materials, as directed by the Trust, in advance of Stakeholder calls/meetings, and 5) review and comment on draft Stakeholder meeting minutes and responding to Stakeholder comments and questions throughout 2018.

Comparison to 2017 Subtasks: No subtasks have been added or removed, although we anticipate a slight increase in level of effort to prepare visuals and meeting materials for various Stakeholder meetings throughout the year, as requested by the Trust. The number of Stakeholder Technical Roundtable Meetings has been reduced from three to two.

### Assumptions:

- For budgeting purposes, it is assumed that up to four Ramboll staff will attend in-person at the two-day Annual Stakeholders Meeting in Las Vegas, as well as attend a one-day preparatory meeting with the Trust in Henderson.
- For budgeting purposes, it is assumed that up to three Ramboll staff will attend three two-hour Quarterly Stakeholder Calls.
- For budgeting purposes, it is assumed that up to three Ramboll staff will attend in-person at two one-day Stakeholder Technical Roundtable Meetings in Las Vegas.

Anticipated Schedule: Work on this task will be implemented around the timing of the quarterly Stakeholder meetings/calls and the Stakeholder Technical Roundtable Meetings. No NDEP submittals are anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$150,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>F05B – Stakeholder Relations</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$120,000	\$115,000	\$150,000

## **G01 – Sale Parcel: HRAs**

Task Description: The following Sale Parcel Health Risk Assessment (HRA) reports were submitted to NDEP in 2017:

- 1) *Health Risk Assessment for Parcels C, D, and G*, submitted to NDEP on July 31, 2017; NDEP response letter dated September 18, 2017 included comments in Attachment A. A revised deliverable (Revision 1) and response to comments (RTCs) was submitted to NDEP on November 3, 2017 and approved by NDEP on January 19, 2018.
- 2) *Health Risk Assessment for Parcel H*, submitted to NDEP on October 20, 2017.
- 3) *Health Risk Assessment for Parcel F*, submitted to NDEP on December 16, 2017.

The 2018 scope of work for this task includes 1) finalizing and obtaining NDEP approval of the Sale Parcel HRA H and F reports listed above, and 2) assisting to obtain No Further Action (NFA) letters from NDEP for Parcels C, D, F, G, and H.

Comparison to 2017: The 2017 scope of work was completed in 2017. This scope of work is for new efforts anticipated in 2018 pertaining to responding to NDEP comments and NDEP approval of the Sale Parcel HRA reports and obtaining NFA letters from NDEP for the Sale Parcels.

### Assumptions:

- One round of comments will be received from NDEP for the *HRA Report for Parcel F* and the *HRA Report for Parcel H*, respectively. A moderate level of effort is assumed to address NDEP comments and submit Revision 1 for each of these reports. An errata to address comments on Revision 1 for each of these reports will be prepared, if needed.
- The final approved HRA Reports for Parcels C, D, and G; Parcel F; and Parcel H are anticipated to provide the basis for obtaining the NFA letters from NDEP for these parcels; this scope of work assumes additional technical support to obtain NFAs will not exceed \$5,000 per parcel.
- NDEP will approve the Parcel C DVSR/EDD and Parcel F DVSR/EDD submittals in late 2017 or early 2018, without additional consulting effort in 2018 pertaining to these submittals.
- No travel is budgeted for this task.



**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2018, with the following NDEP deliverables anticipated, if required:

- First Quarter 2018: *HRA Report for Parcel H, Revision 1* and associated RTCs.
- First Quarter 2018: *HRA Report for Parcel F, Revision 1* and associated RTCs.
- Second Quarter 2018: Errata for the *HRA Report for Parcel H, Revision 1*.
- Second Quarter 2018: Errata for the *HRA Report for Parcel F, Revision 1*.

The actual scope of work to be completed in 2018 will depend on the overall project schedule and the extent and timing of NDEP review comments.

**Budget Information:** Based on this scope of work, the estimated 2018 budget for this task is \$115,000. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed within the first half of 2018 with no task specific rollover into 2019.

<b>G01 – Sale Parcel HRAs</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$494,000	\$468,000	\$115,000

#### **H04 – Data Verification and Management**

**Task Description:** Ramboll will continue to provide data verification and data management services for the groundwater monitoring program for the NERT Site, as described in the 2016 Remedial Performance Groundwater Sampling and Analysis Plan (GWSAP) for the Site. A revised groundwater monitoring program was presented in the 2016 Groundwater Monitoring Optimization Plan (2016 GWMO Plan), and approved by NDEP on June 24, 2016. Based on the revised groundwater monitoring program, which was implemented starting in 2016, approximately 1,300 groundwater level measurements (not including transducer data discussed below) will be collected and over 5,500 groundwater analyses will be performed on over 900 groundwater samples during 2018. This includes eight monthly events, two quarterly events (conducted during first and third quarters), one expanded semi-annual event (conducted during fourth quarter), and one expanded annual event (conducted during second quarter).

As detailed in the NERT Budget Amendment 2017-01, this task also includes data verification and data management services related to the monthly and semi-annual surface water sampling of the Las Vegas Wash which began in June 2017 at the request of the Trust. Each monthly surface water sampling event consists of 57 analyses performed on 19 samples. Each semi-annual surface water sampling event consists of an additional 24 analyses performed on an additional

eight samples. Therefore, the total number of analyses for 2018 is 732 to be performed on 244 samples.

The data verification and management effort includes 1) keeping field personnel informed of site activities that could impact data collection efforts; 2) providing support as necessary to Tetra Tech, Envirogen Technologies Inc. (ETI), and the Trust to facilitate the groundwater and surface water sampling efforts by ETI and Tetra Tech; 3) coordinating with field personnel and the laboratory regarding data collection and management matters; 4) processing data, maintaining the database, and performing QA/QC for completeness; 5) performing data verification and coordinating with a third party subcontractor for data validation; and 6) corresponding with the Trust and NDEP as necessary on data management matters. This scope of work also includes download of data from 43 pressure transducers deployed in 2017 and occasional transducer network maintenance.

Comparison to 2017: The following task was removed for 2018 compared to the 2017 scope of work:

- The one-time effort to provide support to Tetra Tech, ETI, and the Trust to facilitate the transition of groundwater sampling efforts from ETI to Tetra Tech is not included in the 2018 scope because the task is complete.

The following task was added for 2018 compared to the 2017 scope of work:

- Transducer data download, verification, and management and transducer network maintenance for the pressure transducers deployed in 2017.

Assumptions:

- Tetra Tech will perform all groundwater monitoring program and surface water sampling and measurement activities under a contract directly with the Trust, with the exception of samples taken from extraction wells which will be performed by ETI.
- Tetra Tech will provide oversight and review of field activities and ensure the correct samples are collected for laboratory analysis.
- Tetra Tech will ensure that all deliverables produced by field personnel as part of the groundwater monitoring program are complete, have undergone data verification and Quality Assurance/Quality Control (QA/QC) evaluations, and are approved by a Nevada Certified Environmental Manager (CEM).
- Tetra Tech and ETI will work together to communicate anticipated/unanticipated changes in the sampling program to the Trust and Ramboll, as necessary.
- It is anticipated that this effort can be performed by Ramboll via routine communications with Tetra Tech and ETI and will not require an on-site presence.
- The scope does not include any data verification or management efforts related to data from the ongoing RI.

- Data validation efforts will include data collected from July 2017 through June 2018. Effort for the validation of data collected in July to December 2018 is anticipated to take place in 2019, and is therefore not included in this scope of work and budget estimate.
- For budgeting purposes, it is assumed that one Ramboll staff member will travel to Henderson up to four times during 2018 for the periodic maintenance of the transducer network, as described above.

**Anticipated Schedule:** Data verification and management efforts associated with groundwater monitoring program data will be completed for each groundwater monitoring program sampling event. This includes eight monthly events, two quarterly events (conducted during first and third quarters), one expanded semi-annual event (conducted during fourth quarter), and one expanded annual event (conducted during second quarter). Data verification and management efforts associated with surface water sampling will be completed for each monthly event and expanded semi-annual event. Data deliverables, including Data Validation Summary Reports (DVSRs) and Electronic Data Deliverables (EDDs), will be submitted with the Semi-Annual Remedial Performance Memorandum and the Annual Remedial Performance Report in April and October 2018, respectively.

**Budget Information:** Based on this scope of work, the estimated 2018 budget for this task is \$258,000, with no contingency added to the budget. The proposed budget includes approximately \$99,000 for the data validation subcontractor's role. It is anticipated that groundwater monitoring program data verification and management will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>H04 – Data Verification and Management</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$240,000	\$202,000	\$282,000

## **H05 – Data Evaluation and Reporting**

**Task Description:** Ramboll will continue to provide data evaluation and reporting services for the groundwater and surface water monitoring program for the NERT Site. The primary deliverables associated with this task are the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report, to be submitted to NDEP in April and October 2018, respectively. As mentioned previously, approximately 1,300 groundwater level measurements will be collected, over 5,500 groundwater analyses will be performed on over 900 groundwater samples, and over 730 surface water analyses will be performed on over 240 surface water samples as part of the monitoring program during 2018. The monitoring data will be compiled, reviewed, analyzed, presented, and interpreted in order to describe the dynamic groundwater conditions at the Site and in the downgradient plume. The data reviewed as part of this task will be used to

comply with NDEP requirements for groundwater monitoring and reporting as well as support other tasks relying on monitoring data including the following: adjusting the operation of the Groundwater Extraction and Treatment System (GWETS) to optimize remedial performance; informing the planning and implementation of the RI/FS tasks including evaluation of remedial alternatives; and calibrating and refining the groundwater model.

This effort includes 1) conducting a complete technical review and evaluation of data including field and analytical reports; 2) running queries on the NERT database to prepare data summaries; 3) accessing and querying the BMI database (maintained by NDEP), the Southern Nevada Water Authority (SNWA) database of surface water sampling results, and the US Geological Survey database of surface water flow measurements as necessary to supplement NERT data; 4) preparation of tables, figures, maps, and other data presentations necessary for interpretation of data; 5) review of relevant reports prepared by other parties (e.g., from neighboring facilities) to augment our understanding of NERT data; 6) preparation of one (1) Semi-Annual Remedial Performance Memorandum and one (1) Annual Remedial Performance Report for submittal to NDEP, including data analyses, calculations, interpretations, and previously-defined GWETS performance metrics requested by NDEP; 7) compiling and reporting on the environmental footprint of the GWETS and the groundwater monitoring program for the period July 2017 through June 2018, using methodology and formats previously specified by USEPA; 8) corresponding with NDEP on matters relating to groundwater monitoring; and 9) responding to NDEP comments which may be received from NDEP on the 2017 Semi-Annual Remedial Performance Memorandum and the 2017-2018 Annual Remedial Performance Report.

Comparison to 2017: The following subtasks were removed for 2018 compared to the 2017 scope of work:

- Effort to deploy 20 pressure transducers in monitoring wells in the On- and Off-site NERT RI Study Areas and 23 pressure transducers in the Eastside Study Area (\$133,000).
- Effort to review or implement potential Best Management Practices (BMPs) for the Groundwater Extraction and Treatment System (GWETS) and Groundwater Monitoring (GWM) Program following the ASTM Standard Guide for Greener Cleanups (E2893-16). In 2017, this effort included assessment, prioritization, selection, and documentation of potential BMPs (\$58,000). Effort related to the Greener Cleanup BMPs is expected to be performed on a separate task (F99L) in 2018.

The following subtask was increased for 2018 compared to the 2017 scope of work:

- Effort to conduct an analysis of the environmental footprint related to GWETS and GWM activities for the period July 2017 through June 2018, including coordination with data generators, Tetra Tech and ETI. This analysis will be conducted using EPA-developed Spreadsheets for Environmental Footprint Analysis (SEFA) workbooks. The results of this analysis will be reported in the 2017-2018 Annual Remedial Performance Report. Although compilation of data for the environmental footprint was included in the 2017

budget, the additional effort to analyze the data using the SEFA work books was not; therefore, the budget is incrementally increased \$12,000 in 2018 to cover this additional effort.

- Effort to implement the expanded GWETS performance metrics across the Eastside and Downgradient Study Areas, as described in the RI Study Area Mass Estimate and Expanded Performance Metrics Technical Approach Technical Memorandum dated October 5, 2017, approved by NDEP on October 19, 2017.

#### Assumptions:

- The budget for corresponding with NDEP and responding to NDEP's comments on the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- Consistent with prior reporting, mass removal and remaining plume mass calculations will only be performed for chromium and perchlorate. Calculations for additional analytes would require a task budget amendment.
- Consistent with the previously approved approach to streamline the Semi-Annual Remedial Performance Memorandum, plume maps and revised plume mass estimates will only be included in the Annual Remedial Performance Report.
- Chloroform is the only VOC that will be evaluated and discussed in the remedial performance report text, figures, and plates. Data for other VOCs will be presented in data tables as an appendix.
- The level of effort for discussion of the new analytes (chloroform, chlorate, and nitrate) in the report text is assumed to be analogous to TDS (i.e., not to the level of primary COPCs perchlorate and chromium).
- The scope does not include data evaluation or reporting efforts for data from the ongoing RI. The status of RI efforts will be acknowledged in the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report, but not analyzed or evaluated. This additional information will be detailed at length in the RI Report.
- The data compilation and analysis related to the environmental footprint will only include information for the period July 2017 through June 2018 associated with the groundwater monitoring program or operation of the GWETS. Other site activities (e.g. Phase 2 RI, treatability studies, etc.) will not be included in the environmental footprint.

Anticipated Schedule: Data evaluation and reporting efforts for the monitoring program will be implemented on an ongoing basis throughout 2018. The following NDEP deliverables will be prepared:

- Second Quarter 2018 (NDEP due date is April 30, 2018): The Semi-Annual Remedial Performance Memorandum, consisting of a streamlined data transmittal and summary of remedial performance, covering data collected from July through December 2017.
- Fourth Quarter 2018 (NDEP due date is October 31, 2018): The Annual Remedial Performance Report, covering data collected from July 2017 through June 2018.

**Budget Information:** Based on this scope of work, the estimated 2018 budget for this task is \$563,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that groundwater monitoring program data evaluation and reporting will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>H05 – Data Evaluation and Reporting</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$652,000	\$631,000	\$563,000

## **H07 – Monitoring Well Repairs**

**Task Description:** This scope of work includes efforts necessary to complete repairs of select monitoring wells owned by the Trust. In September 2016, well inspections were conducted that included all NERT-owned wells in addition to wells owned by others that are sampled as part of the NERT groundwater monitoring program, including wells owned by Basic Remediation Company LLC (BRC), Olin/Stauffer/Syngenta/Montrose (OSSM), City of Henderson (COH), and American Pacific Corporation (AMPAC/Endeavour). As part of the compilation of well inspection data collected in 2016, approximately 166 NERT-owned wells were identified and prioritized for repair. An additional 18 wells owned by other parties were also identified and prioritized for repair. Based on the well inspections performed, a subset of well repairs to be performed has been identified as maintenance activities that will be performed by ETI under the contract between ETI and the Trust for operation of the GWETS. Additional well repair activities, generally needing a downhole video inspection or well box/casing repair by a driller (ranging from replacement of monitoring well stove pipe lids to replacing damaged well boxes), have been included in this scope of work. Repair of non-NERT owned wells are not included in this scope of work.

This scope of work includes: 1) performing downhole video inspections of select monitoring wells to confirm well depths; 2) conducting monitoring well repairs, and 3) preparation of a brief technical memorandum summarizing monitoring well repairs performed. The proposed scope of work is summarized below.

Comparison to 2017: The proposed 2017 scope of work was completed in 2017. This scope of work is for additional efforts anticipated in 2018 pertaining to completion of monitoring well repairs.

Assumptions:

- Downhole video inspections will be performed at up to 53 monitoring wells; these activities will include removal and reinstallation of existing pump, boreline equipment, and dedicated tubing from the well (if present), downhole video logging, verification of well depths and screened intervals, and attempted removal of any blockages that may be identified.
- Stove pipe lids will be replaced at up to 10 monitoring wells.
- Locking mechanisms used in conjunction with the stove pipe lids will be repaired at up to 12 monitoring wells.
- Well boxes will be replaced at up to 28 monitoring wells; these activities will include removal of the existing well box (by excavation no deeper than five feet), inspection of the PVC riser, replacement of the PVC riser if damaged, installation of a new well box, and constructing a new surface completion.
- The surface completion will be repaired at one monitoring well, including removal of the damaged concrete around the well box and replacement with new concrete.
- A new stove pipe will be installed and well casing will be repaired (if necessary) at one monitoring well, including removal of the existing casing (by excavation no deeper than five feet), inspection of the PVC riser, replacement of the PVC riser if damaged, installation of a new stove pipe, and constructing a new surface completion.
- Stove pipes will be replaced at up to six monitoring wells; these activities will include removal of the existing stove pipe mount (by excavation no deeper than five feet), inspection of the PVC riser, replacement of the PVC riser if damaged, installation of a new stove pipe mount, and constructing a new surface completion.

Anticipated Schedule: Work on this task is anticipated to take place primarily in the first half of 2018. Monitoring well repairs are anticipated to be performed in the first and second quarters, with preparation of the technical memorandum in the second or third quarter of 2018. No NDEP submittals are anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$145,000. The budget estimate includes up to \$72,000 for monitoring well video inspection and monitoring well repair subcontractors. No contingency has been added to the budget. This work is anticipated to be completed in 2018 with no task specific rollover into 2019.

<b>H07 – Monitoring Well Repairs</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$20,000	\$18,000	\$145,000

## **H08 – Database Management, Maintenance, and Accessibility**

Task Description: Under this task, Ramboll will continue to maintain and update a cloud-based, internet-accessible master NERT project database to provide continuous access to project data for AECOM, Tetra Tech, the Trust, and other third parties. As part of this scope of work, Ramboll will provide information and direction to database users on how to access and query the database and respond to user questions about the database or connecting to and querying the database. At least twice per month, the database will be updated with newly available data.

In the 2018 scope, data from AECOM and Tetra Tech will continue to be reviewed and incorporated into the master NERT project database. This effort began in third quarter 2016 following NDEP's approval of the Trust's Budget Amendment 2016-01 on August 3, 2017.

The 2018 scope will also include further development of an internet-accessible database front-end portal to enhance accessibility of data by providing filtering and display tools and exporting of data. The first version of this "Data Explorer" was completed in 2016, which included capabilities to filter and display groundwater data in tables, display queried data on online maps, select layers for display, and display queried data on time-series plots. Enhancements were made to the Data Explorer in 2017 including presentation of soil data; flow and mass removal data; expanded mapping capability; and other user friendliness features. Continued development and maintenance of the Data Explorer will be performed in 2018 in collaboration with the Trust. Also in 2018, it is anticipated that the Data Explorer will be shared with NDEP and USEPA. Ramboll will introduce the Data Explorer to NDEP and USEPA via an in-person demonstration.

The 2017 scope for this task included development of a data management strategy and preparation of a written Data Management Plan. A revised draft of the Data Management Plan was submitted to the Trust on August 8, 2017. It is assumed that the Data Management Plan will be finalized and implemented in early 2018.

The 2017 scope for this task included the development and implementation of an externally-available searchable database of NERT Site and applicable BMI Complex Party documents for use by the Trust and project consultants. It is anticipated that this database will be launched in early 2018, with maintenance and additional development occurring throughout the year.

The 2018 scope for this task will also include organizing documents for the NERT Site and other BMI Complex facilities and classifying and filing the documents into an established document repository for project staff use. As we have seen in prior years, the document classification,



organization system and searchable document database helps to streamline document review-related work on other project tasks. In 2017, this subtask was conducted under Task F04.

Comparison to 2017: No subtasks from 2017 have been removed. The following subtasks were included in the 2017 scope of work and are also included in the 2018 scope of work, with some modifications:

- Updates, maintenance and response to user requests of cloud-based, internet-accessible master NERT project database (budget estimate unchanged from 2017);
- Data transfers and maintenance of the system to incorporate data from Tetra Tech and AECOM into the NERT project database (budget estimate unchanged from 2017);
- Development, updates and maintenance of the Data Explorer including enhanced display of geologic information (budget estimate unchanged from 2017);
- Development of a data management strategy and a written Data Management Plan (budget estimate reduced by \$61,000 from 2017; only the finalization and integration of the Data Management Plan remains to be completed in 2018); and
- Further development and maintenance of an externally-available searchable database of NERT Site and BMI Complex Party documents for use by the Trust and project consultants (budget estimate reduced by \$5,000 from 2017).

The following subtasks are added to the 2018 scope of work:

- Meeting to introduce and demonstrate the Data Explorer with NDEP and USEPA;
- Implementation and maintenance of the Data Management Plan including periodic data quality assurance conference calls with Tetra Tech and AECOM and Integration of AECOM transducer data from the Downgradient Study Area in the NERT database; and
- Organizing documents for the NERT Site and other BMI Complex facilities and classifying and filing the documents into an established document repository for project staff use.

Assumptions:

- This scope of work does not include integration of historical data sets or data sets from other BMI complex facilities into the database, but these data sets may be presented on the Data Explorer if they are incorporated into the master database via other project tasks.
- For budgeting purposes, it is assumed that one Ramboll staff member will travel to Henderson once during 2018 for the in-person meeting with NDEP and USEPA described above.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$262,000. There are no subcontracted services for this task and no contingency has been added

to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>H08 – Database Management, Maintenance, and Accessibility</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$282,000	\$235,000	\$262,000

## **J02 – Permit Compliance and Reporting**

Task Description: Ramboll will provide continued permitting and compliance assistance to the Trust. Ramboll's permitting and compliance assistance under this task is associated with the following permits:

- 1) NPDES Permit #NV0023060 (permit for discharge of treated effluent to the Las Vegas Wash);
- 2) UIC Permit #UNEV94218 (permit for injection of Lake Mead water into two injection/recharge trenches); and
- 3) Water Appropriation Permits #s 50801, 59681, 59682, 65199E, 67701E, 68143E, 68319E, 69589E, 79866E, 79867E, 79868E, 86268E, and 87352E (permits for extraction of groundwater for pollution control).

Ramboll's permitting and compliance assistance will include the following tasks: 1) providing technical assistance to the Trust as required for maintaining compliance with each permit; 2) preparation and submittal of compliance reports for each permit as well as the Northshore Road perchlorate data; 3) tracking laboratory analytical data and preparation of the weekly NPDES tracker; 4) correspondence with NDEP and Nevada Division of Water Resources (NDWR) personnel, including reporting requirements due to permit excursions, if any; and 5) participation in agency compliance inspections pertaining to the permits listed above.

Comparison to 2017: The scope of work and level of effort for this task is generally consistent with that from 2017, except that the following subtask from 2017 has been completed and is not included in the 2018 scope of work:

- Effort associated with transitioning to the renewed NPDES permit #NV0023060 for the Site, which became effective on January 1, 2017.

In addition, the following compliance deliverable is no longer required (per NRS 533.380 paragraph 5) and is not included in the 2018 scope of work:

- Annual Extension of Time for Filing Proof of Completion for Water Appropriation Permit 79867E, submitted to NDWR.

#### Assumptions:

- This task does not include permitting and compliance assistance for the NPDES permit #NV0024228 for SNWA weir dewatering treatment (see Task L09), the Groundwater Discharge Permit #NEV2001515, the Dam Permit #J-665, the Clark County Department of Air Quality Minor Source Permit #17249, or other permits not specifically listed above.
- Annual permit fees are anticipated to be paid directly by the Trust and are not included in the budget for this task.
- For budgeting purposes, it is assumed that one Ramboll staff member will travel to the Site once during 2018 for this task.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018, with the following compliance deliverables anticipated:

- Quarterly Reports and DMRs (submitted electronically via NetDMR) for NPDES Permit #NV0023060, submitted to NDEP-BWPC;
- Semi-Annual Reports for the UIC Permit #UNEV94218, submitted to NDEP-BWPC;
- Combined Quarterly Pumpage Reports for Water Appropriation Permits, submitted to NDWR;
- Monthly Northshore Rd Perchlorate Mass Tracking Deliverable, submitted to NDEP-BISC; and
- Weekly NPDES Trackers for NPDES Permit #NV0023060, submitted to the Trust.

Budget Information: Based on this scope of work, the estimated 2018 budget for Task J02 is \$143,000. The estimated budget breaks down as follows: 1) NPDES Permit #NV0023060 tasks: \$68,000; 2) UIC Permit tasks: \$20,000; 3) Water Appropriation Permits tasks: \$25,000; 4) Northshore Road perchlorate data tasks: \$14,000; and 5) General permitting and compliance correspondence with the Trust, Tetra Tech, and ETI: \$16,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>J02 – Permit Compliance and Reporting</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$168,000	\$115,000	\$143,000

### J03 – GWETS Data Management and Evaluation

Task Description: Ramboll will continue to provide data management and evaluation services for the GWETS monitoring program for the NERT Site. The GWETS monitoring program consists of about 4,000 analyses per year performed at an off-site state-certified laboratory. Samples are collected and analyzed throughout the year during weekly, bi-weekly, monthly, quarterly, and annual sampling events. Field measurements, including flow rates within the GWETS and extraction rates of individual wells, are also collected and compiled. The data gathered from these sampling events support 1) the compliance programs related to the various permits covering operation of the GWETS; 2) performance evaluations of the GWETS and the remediation program; and 3) the Semi-Annual Remedial Performance Memorandum and the Annual Remedial Performance Report.

This effort includes 1) downloading and tracking data as it is generated (both field measurements and analytical data) to assess completeness; 2) coordination with laboratory and field personnel on data generation and management issues including missing data; 3) input of data into the database and maintaining data in an organized, transparent, and readily accessible manner; 4) performing QA/QC on the database; 5) conducting high-level reviews of GWETS performance data; 6) contacting laboratory and field personnel regarding anomalous data and development of corrective actions; 7) contacting field personnel regarding GWETS operational issues; 8) running queries on the NERT database to prepare data summaries and perform data evaluations, including chromium and perchlorate mass removal calculations and capture zone evaluations; and 9) corresponding with the Trust, Tetra Tech, ETI, and NDEP as necessary on GWETS data management matters and other items relating to GWETS operation.

Comparison to 2017: The scope is generally consistent with that of 2017. No subtasks have been added or removed.

#### Assumptions:

- Tetra Tech will provide review of ETI's GWETS data.
- ETI will perform all GWETS monitoring program sampling and measurement activities under a contract directly with the Trust.
- Reporting of the GWETS data evaluations performed under this task will be incorporated into the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report, which are included under Task H05.
- No travel is budgeted for this task.

Anticipated Schedule: Samples are collected and analyzed throughout the year during weekly, bi-weekly, monthly, quarterly, and annual sampling events. The work on this task will be implemented on an ongoing basis throughout 2018. No NDEP submittals are anticipated for this task.

**Budget Information:** Based on this scope of work, the estimated 2018 budget for this task is \$118,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that GWETS data evaluation and management will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>J03 – GWETS Data Management and Evaluation</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Budget Requested
\$126,000	\$91,000	\$118,000

## **L01 – Community Involvement**

**Task Description:** The *Community Involvement Plan (CIP)* for the NERT Site was developed to facilitate communication between the community surrounding the NERT RI Study Area with NDEP and the Trust and to encourage community involvement in site activities. The CIP addresses the relationship with the community, provides a background of the community, presents the Trust’s community involvement program, and provides a listing of resources available. As established in the CIP, the Trust will continue to provide routine updates to the public through mailings and public meetings.

The 2018 scope of work includes 1) reviewing and updating (in collaboration with NDEP) the Site Status Summary for the Site, which is provided at <https://ndep.nv.gov/environmental-cleanup/site-cleanup-program/active-cleanup-sites/bmi-complex/nevada-environmental-response-trust-nert>; 2) ongoing maintenance of the Trust’s online document repository website (previously established at <http://www.Nert-Trust.com/>); 3) researching questions generated during community engagement activities, as well as assisting NDEP with community questions, as requested; 4) as required by the CIP, preparation of an updated cover letter and project Site fact sheet, updating the CIP mailing list to incorporate the latest project information and community residence data, and performing a community mailing (to include English language versions of the updated cover letter, fact sheet, and a previously updated Frequently Asked Questions (FAQ) document); and 5) translation of the community mailing documents into Spanish and Braille (which will be made available on the Trust’s online document repository website).

**Comparison to 2017:** This scope of work is similar to the 2017 scope of work for this task, with the exception that all community involvement activities are included in this task (Task L01); whereas, in 2017, community involvement activities related to the Eastside Study Area were included in a separate task. In addition, the following subtask was removed: Revision of the CIP.

### **Assumptions:**

- No travel is budgeted for this task.

- A community interview meeting will not be held in 2018.
- It is anticipated that only a moderate level of effort will be required to update the Fact Sheet in 2018.
- The scope of work includes a minimal level of effort for responding to NDEP comments on the updated Fact Sheet.

Anticipated Schedule: The combined Fact Sheet and FAQ mailing is anticipated to take place in second quarter 2018, with remaining work on this task proceeding throughout the year. No deliverables to NDEP on this task are anticipated in 2018.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$70,000. It is anticipated that community involvement activities will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>L01 – Community Involvement</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Requested Budget
\$60,000	\$26,000	\$70,000

## **L09 – Weir Dewatering Treatment: NPDES Permit Compliance**

Task Description: This task includes continuing effort associated with compliance assistance for NPDES Permit #NV0024228, which was issued by NDEP in August 2017 for the treatment and discharge of water generated by SNWA through its weir construction efforts. This effort includes 1) working with the treatment plant operator to ensure compliance with the NPDES permit, as requested by the Trust; 2) working with the treatment plant operator and the analytical laboratory to implement the analytical requirements in the NPDES permit; 3) providing technical assistance to the Trust as required for maintaining compliance with the permit; 4) preparation and submittal of quarterly compliance reports and discharge monitoring reports (DMRs) for the permit; 5) tracking laboratory analytical data and preparation of a weekly NPDES tracker; and 6) correspondence with NDEP-BWPC personnel, including reporting requirements due to permit excursions, if any.

Comparison to 2017: The 2017 scope of work primarily included meetings and communications with NDEP-BWPC to address comments on the NPDES permit application, which was submitted in December 2016, and review and provide comments to NDEP-BWPC on the draft NPDES permit and fact sheet. In addition, once the permit was issued in August 2017, Ramboll prepared and submitted the first quarterly report and DMR for 3Q 2017.

#### Assumptions:

- This task does not include permitting and compliance assistance for any other permit besides NPDES Permit #NV0024228.
- Annual permit fees are anticipated to be paid directly by the Trust and are not included in the budget for this task.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018, with the following compliance deliverables anticipated:

- Quarterly Reports and DMRs (submitted electronically via NetDMR), submitted to NDEP-BWPC; and
- Weekly NPDES Trackers, submitted to the Trust.

Budget Information: Based on this scope of work, the estimated 2018 budget is \$48,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>L09 – Weir Dewatering Treatment: NPDES Permit Compliance</b>		
2017 Approved Budget*	Anticipated 2017 Budget Used by 12/31/2017*	2018 Budget Requested
\$29,000	\$26,000	\$48,000
*includes F99C and L09A		

### **M03 – RI Phase 2 Field Investigation**

Task Description: Ninety percent (90%) of Task M03 has been completed. The scope of work for 2018 includes efforts that are currently in progress to complete the Phase 2 RI Field Investigation tasks, as well as the additional 2018 subtasks described below.

Rollover and Continuation of 2017 Subtasks: This task includes a rollover budget of \$831,000 to complete the following remaining subtasks from the 2017 scope of work:

- Installation, development, sampling, analytical testing, and data validation for two RI Phase 2 monitoring wells (PC-168 and PC-176) and one soil boring (PCDB-6) (pending permitting and obtaining property access as noted below).
- Boring log gINT data entry, analytical data validation, and data management for Phase 2 RI data.

The following subtasks are added for 2018 compared to the 2017 scope of work:

- As directed by the Trust, the effort to prepare a RI Phase 2 Modification for a vapor intrusion evaluation in OU-1/OU-2 was initiated in 2017; this effort will continue in 2018. This scope of work includes 1) evaluation of available VOC soil gas and groundwater data; 2) preparation of a draft RI Modification for Trust review; and 3) addressing Trust comments and preparing a final RI Modification for submittal to NDEP. (\$30,000)
- Implementation of a soil gas sampling field investigation, including laboratory analysis of soil gas samples and validation of soil gas analytical results. (\$150,000)
- Drilling, installation, development, and sampling of stainless steel replacement wells for monitoring wells M-224, M-225, M-227 and M-228. Wells M-224 and M-228 were compromised by DNAPL plume constituents. The two other associated deep or intermediate wells (M-225 and M-227) are being replaced as a proactive measure to ensure the future integrity of these sampling locations, as they are also installed within zones of high DNAPL constituent concentrations. The original PVC wells will be decommissioned as part of this task. (\$111,000)
- Drilling, installation, development, and sampling of a deeper monitoring well adjacent to PC-172. PC-172 is currently dry, but will be retained to monitor groundwater levels in the event they rise. (\$10,000)

#### Assumptions:

- COH approves the Revocable Permit for Phase 3 RI soil borings and monitoring wells located on COH property. The three remaining Phase 2 RI locations PC-168, PC-176, and PCDB-6 were relocated to COH properties not included on the Phase 2 RI Revocable Permit due to field conditions.
- Since the scope of work for the soil gas sampling field investigation is unknown at this time, an accurate budget estimate to implement the investigation cannot be determined at this time. An order-of-magnitude estimated budget of \$150,000 is included to perform this subtask; however, this budget estimate may need to be modified following preparation of the forthcoming RI Modification.

Anticipated Schedule: The work on this task will be implemented during first half of 2018. No NDEP submittals are anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$1,596,000 (including a rollover budget of \$1,250,000 and an additional \$346,000 for the additional subtasks noted above). A 15% contingency is included in each of these estimated budget amounts. The estimated budget includes approximately \$700,000 for drilling, analytical laboratory, and data validation subcontractor costs. It is anticipated that activities on this task will be completed in 2018 with no task specific rollover into 2019.



<b>M03 – RI Phase 2 Field Investigation</b>				
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	Anticipated 2017 Rollover Budget	2018 Budget Requested for Expanded Scope	Total 2018 Requested Budget
\$7,331,000	\$6,081,000	\$1,250,000	\$346,000	\$1,596,000

## **M06 – BHRA and SLERA Work Plan Implementation**

Task Description: This scope of work includes efforts that are anticipated in 2018 as part of the RI for the preparation of the Baseline Health Risk Assessment (BHRA) and the refined Screening Level Ecological Risk Assessment (refined SLERA) for the Operations Area<sup>1</sup> at the NERT Site (in OU-1), as well as for human health and ecological risk assessment activities for OU-2 and OU-3. As shown on Figures 1 and 2, the BHRAs and ecological risk assessments (ERAs) for OU-1, OU-2, and OU-3 will be conducted using the data collected during the Phase 1, 2, and 3 RIs based on the methodologies described in each investigation's corresponding work plans. The risk results and conclusions derived from the BHRAs and ERAs will be considered in the feasibility studies and ROD development for each of the three OUs. To better track project costs and budget status, Ramboll has divided this work into two subtasks for the BHRA and ERA (M06A and M06B), respectively, as described below.

### **M06A – BHRA Work Plan Implementation**

Task Description: This scope of work includes efforts that are currently in progress as part of the RI for the preparation of Revision 0 of the Soil Baseline Health Risk Assessment (BHRA) for the Operations Area (in OU-1), and the efforts for the preparation of the Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2, as well as the BHRA Work Plan for OU-3. Implementation of the Soil Gas/Groundwater BHRA for OU-1 and the Soil Gas/Groundwater BHRA for OU-2 is also included in this scope of work. The specific tasks and budget identified below are for work that is anticipated to be conducted in 2018.

Comparison to 2017: The proposed 2017 scope of work was completed in 2017. This scope of work is for new efforts anticipated in 2018 pertaining to completion of the BHRAs in the RI Study Area. The 2018 scope of work includes:

- Draft responses to NDEP comments (if any) on the Interim COPC/DU Report, Revision 1 for OU-1;
- Update the soil BHRA data set for OU-1 by incorporating additional soil data from ongoing investigations (i.e., Phase 2 RI, Tetra Tech Building 4/5 Investigation);

<sup>1</sup> In previous Scopes of Work, the Operations Area was referred to as the Facility Area. The Operations Area includes all of OU-1 except Parcels C, D, E, F, G, and H.

- Prepare and submit Revision 0 of the Soil BHRA Report for OU-1 to update the COPC selection and DU identification and conduct exposure assessment, toxicity assessment, and risk characterization;
- Prepare the Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2 and the BHRA for OU-3; and
- Implement the Soil Gas/Groundwater BHRA for OU-1 and the Soil Gas/Groundwater BHRA for OU-2.

### **Operable Unit 1**

This scope of work includes new efforts anticipated in 2018 pertaining to the completion of the Soil and Soil Gas/Groundwater BHRAs for the Operations Area at the NERT Site (OU-1). The 2018 scope of work includes: 1) addressing NDEP's comments (if any) on the interim report *Identification of COPCs and Decision Units for Soils, Revision 1* (Interim COPC/EU Report, Revision 1) for OU-1; 2) updating the soil BHRA data set for OU-1 by incorporating additional soil data from ongoing investigations; 3) submitting Revision 0 of the Soil BHRA Report for OU-1; 4) preparing the Soil Gas/Groundwater BHRA Work Plan for OU-1; and 5) implementing the Soil Gas/Groundwater BHRA for OU-1.

#### **Assumptions:**

- No re-submission of the Interim COPC/DU Report will be performed; NDEP comments on the Interim COPC/DU Report, Revision 1 will be addressed in Revision 0 of the Soil BHRA Report for OU-1.
- The Soil BHRA Report and the Soil Gas/Groundwater BHRA Report for OU-1 will be submitted separately; the Soil Gas/Groundwater BHRA for OU-1 will start in 2018 and the Report will be submitted in 2019.
- The Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 will be submitted as one document. NDEP will approve the Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2 with minimal comments; an errata to address comments, will be prepared, if needed (i.e. the Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2 will not be revised and resubmitted).
- Additional soil gas data for OU-1 will be available prior to the Soil Gas/Groundwater BHRA evaluation for OU-1. An RI Modification No. 10 memorandum, currently under preparation under Task M03, will describe the scope of work for the collection of soil gas data in OU-1.

### **Operable Unit 2**

This scope of work includes new efforts anticipated in 2018 pertaining to the completion of the Soil Gas/Groundwater BHRA for OU-2. The 2018 scope of work includes: 1) preparing the Soil

Gas/Groundwater BHRA Work Plan for OU-2; and 2) implementing the Soil Gas/Groundwater BHRA for OU-2.

Assumptions:

- The Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 will be submitted as one document. NDEP will approve the Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2 with minimal comments; an errata to address comments, will be prepared, if needed (i.e. the Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2 will not be revised and resubmitted).
- No soil BHRA is needed for OU-2; it is anticipated that the Soil Gas/Groundwater BHRA for OU-2 will primarily occur in 2018 and the report will be submitted in 2019.
- Additional soil gas data for OU-2 will be available prior to the Soil Gas/Groundwater BHRA evaluation for OU-2. An RI Modification No. 10 memorandum, currently under preparation under Task M03, will describe the scope of work for the collection of soil gas data in OU-2.

**Operable Unit 3**

This scope of work includes new efforts anticipated in 2018 pertaining to the completion of the BHRA for OU-3. The 2018 scope of work includes preparing the BHRA Work Plan for the soil, soil gas, and groundwater pathways within OU-3.

Assumptions:

- NDEP will approve the BHRA Work Plan for OU-3 with minimal comments; an errata to address comments, will be prepared, if needed (i.e. the BHRA Work Plan for OU-3 will not be revised and resubmitted).
- The BHRA implementation for OU-3 will primarily occur in 2019; the report will be submitted in 2020.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018, with the following NDEP deliverables anticipated:

- Second Quarter 2018: Soil Gas/Groundwater BHRA Work Plan for OU-1/OU-2; and
- Fourth Quarter 2018/First Quarter 2019: Soil BHRA Report for the Operations Area (OU-1) (Revision 0).
- Fourth Quarter 2018/First Quarter 2019: BHRA Work Plan for OU-3.

Budget Information: The estimated budget for this task (M06A) is based on the effort required for the tasks identified above, which are anticipated to be performed in 2018; however, the actual scope of work to be completed in 2018 will depend on the overall project schedule and the extent and timing of NDEP review comments. Based on this scope of work, the estimated 2018 budget for this task is \$590,000. There are no subcontracted services for this task and no

contingency has been added to the budget. It is anticipated that the development of the BHRA for three OUs will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>M06A – BHRA Work Plan Implementation</b>		
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	2018 Requested Budget
\$173,000	\$173,000	\$590,000

### **M06B – Ecological Risk Assessment**

Task Description: This scope of work includes efforts currently in progress as part of the RI to perform a Refined Screening-Level Ecological Risk Assessment (Refined SLERA) for OU-1, as well as efforts to initiate evaluation of ecological risks in OU-2 and OU-3 within the NERT RI Study Area. The following scope of work has been presented by Operable Unit for clarity.

Rollover and Continuation of 2017 Subtasks: This task includes a rollover budget of \$31,000 to complete the following remaining subtask from the 2017 scope of work:

- Performing the refined SLERA and preparation of a refined SLERA report for OU-1.

The following subtasks are added for 2018 compared to the 2017 scope of work:

- Processing and incorporating additional soil data from the Phase 2 RI field investigation into the existing Refined SLERA database, summary statistics, and screening tables for OU-1;
- Preparation of a SLERA for OU-2; and
- Preparation of a Baseline Ecological Risk Assessment (BERA) Work Plan for OU-3.

### **Operable Unit 1**

This scope of work includes efforts currently in progress as part of the RI for the preparation of Revision 0 of the Refined SLERA report for the Facility Area. The Refined SLERA Work Plan, Revision 2 was approved by NDEP on August 14, 2015. The screening and refined assessments were deferred until receipt of data from the RI Phase 2 field investigation currently in progress. The scope of work includes performing the refined SLERA based on existing and additional data collected during the RI Phase 2 field investigation to evaluate whether current Site conditions pose potential unacceptable risks to ecological receptors at the Site and surrounding areas. A tiered approach will be used in the refined SLERA that includes “screening” and “refined” scenarios to evaluate the range of potential risks as described in the Refined SLERA Work Plan, Revision 2. The Refined SLERA report will be prepared and will describe the refined SLERA approach and the results of the screening and refined assessment, including the results from the

food web modeling. The results of the refined SLERA will indicate whether there are potential risks to wildlife from exposure to soil at the NERT Site.

Assumptions:

- No travel is budgeted for this task
- The SLERA analysis for OU-1 will be complete at Step 3a of the US EPA's Eight Step ERA Process (Refined SLERA) and will not proceed to a BERA since the presence of complete ecological risk exposure pathways within OU-1 are unlikely.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018 and continuing into 2019, with the following NDEP deliverables anticipated:

- Second Quarter 2019: Refined SLERA Report for OU-1.

**Operable Unit 2**

This scope of work includes the preparation of a SLERA for OU-2. It is anticipated that the Refined SLERA Work Plan, Revision 2 that was approved by NDEP on August 14, 2015 (for the NERT Site now referred to as OU-1) can be used as guideline for the SLERA to be conducted in OU-2. However, the OU-2 SLERA Work Plan will include an extensive literature and historical document review of the OU-2 area. The scope of work for the SLERA in OU-2 includes:

- Prepare a SLERA Work Plan for OU-2 that identifies existing information and data for the OU-2 area including historical documents, reports and data that can be used in the SLERA.
- Using a conservative analysis designed to examine potential risks in an overly protective fashion, evaluate whether conditions in OU-2 pose potential unacceptable risks to ecological receptors in that area.
- Prepare a SLERA report for OU-2 that will describe the SLERA approach and the results of the screening assessment. The results of the SLERA will indicate whether there are potential risks to wildlife from exposure to soil within OU-2.

Assumptions:

- A site visit to OU-2 will be performed to confirm that there is no significant habitat for wildlife and no critical habitat for threatened and endangered (T&E) species.
- The SLERA will be based on existing information to the extent possible. If it is determined that the data quality and quantity is insufficient to conduct a SLERA, the Trust will be notified.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018 and continuing into 2019, with the following NDEP deliverables anticipated:

- Second Quarter 2018: SLERA Work Plan for OU-2

- Second Quarter 2019: SLERA Report for OU-2.

### **Operable Unit 3**

The scope of work for ecological risk assessment in OU-3 includes preparation of a comprehensive Baseline Ecological Risk Assessment (BERA) Work Plan. A BERA will be completed instead a SLERA because OU-3 contains the Las Vegas Wash ecosystem and various recreational lands. The BERA Work Plan is anticipated to include 1) a description of the environmental setting and the characterization of ecological habitats; 2) identification of potentially exposed ecological receptors, T&E species, and critical habitat; 3) identification of existing data and chemicals of potential ecological concern (COPECs); 4) identification of complete pathways by which ecological receptors could be exposed to COPECs; 5) identification of assessment and measurement endpoints; 6) development of an ecological risk conceptual site model (CSM); 7) preparation of a comprehensive field sampling plan to fill in any data gaps identified during the review of existing data.

#### **Assumptions:**

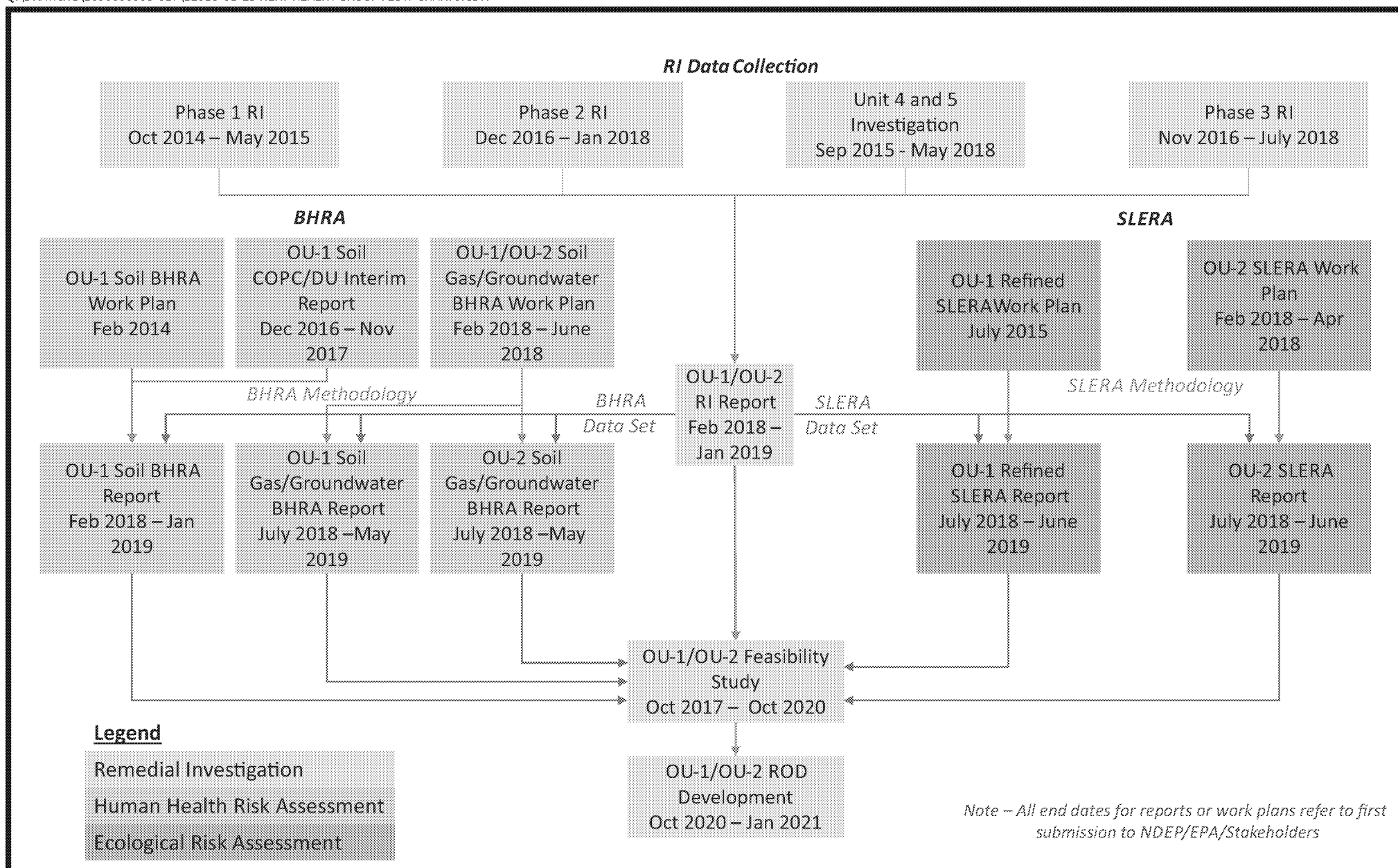
- Field sampling will be required to collect soil and sediment samples and any additional surface water samples deemed necessary to conduct the BERA. The budget for the field investigation is not included herein; a scope of work and budget estimate will be prepared following preparation of the BERA Work Plan.

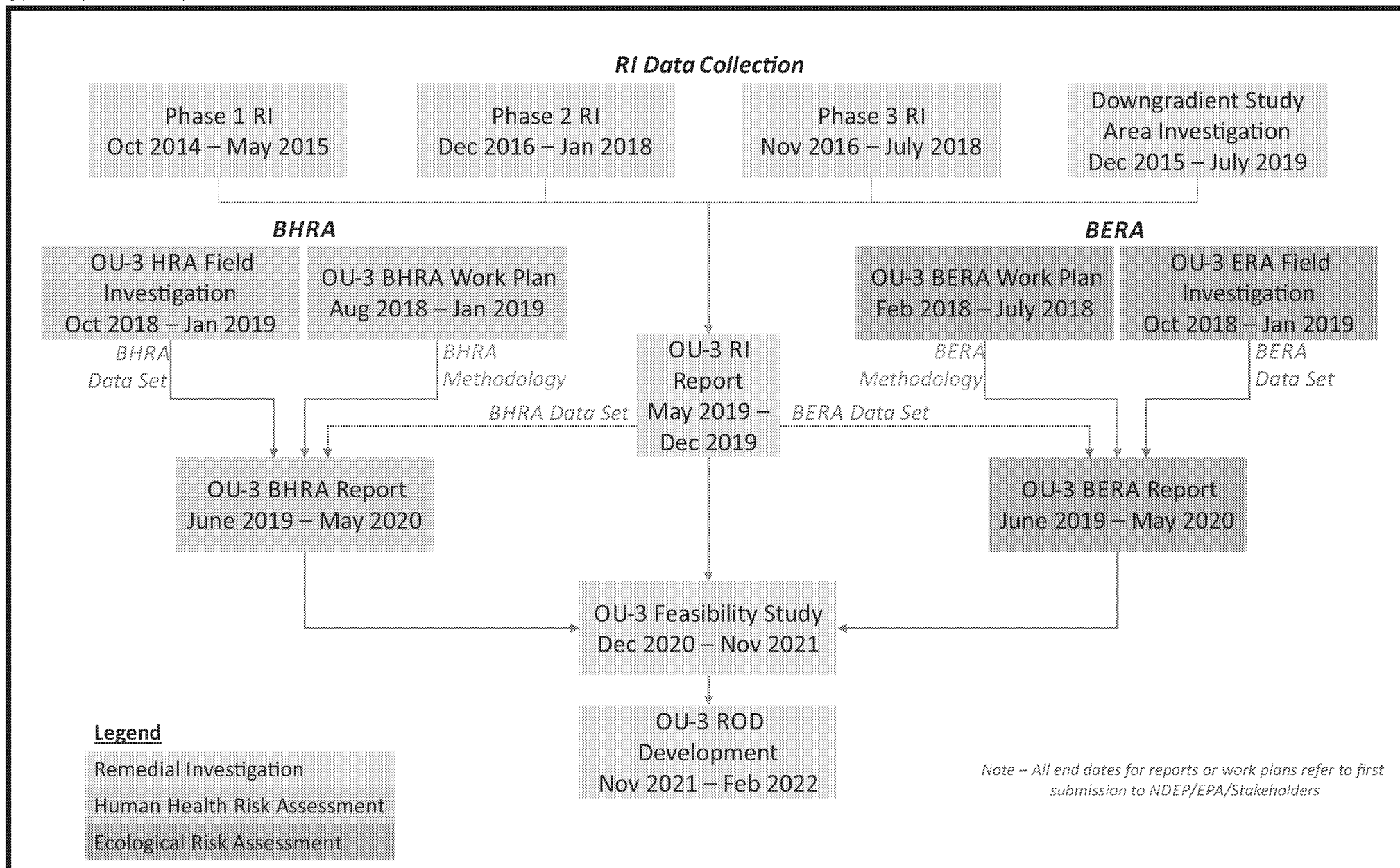
**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2018 and continuing into 2019, with the following NDEP deliverables anticipated:

- First Quarter 2019: BERA Work Plan for OU-3

**Budget Information:** The estimated budget for this task (M06B) is based on the effort required for subtasks in progress from 2017 and the additional subtasks identified above. Based on this scope of work, the estimated 2018 budget for this task is \$156,000 (including a rollover budget of \$31,000 and an additional \$125,000 for the additional subtasks noted above). There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that the ecological risk evaluation for the three OUs will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>M06B – Ecological Risk Assessment</b>				
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	Anticipated 2017 Rollover Budget	2018 Budget Requested for Expanded Scope	Total 2018 Budget Requested
\$45,000	\$14,000	\$31,000	\$125,000	\$156,000







## M07 – Groundwater Modeling

Task Description: The groundwater modeling task will continue in 2018. The NERT groundwater model is a comprehensive model of the southeastern portion of the Las Vegas Groundwater Basin that synthesizes the subsurface investigation data collected by all parties, including the Trust and its consultants, AMPAC/Endeavour and other BMI companies, and public agencies (SNWA, USGS, NDEP, Bureau of Reclamation). The model is a key tool for supporting the NERT RI/FS, the continuous optimization of the GWETS, and other related activities. The model was designed to include all potential source areas of perchlorate and other chemicals of concern, so that the model can be used to better understand the relative contribution of different source areas to discharges into Las Vegas Wash and impacts to other receptors. In addition to providing a tool for synthesizing multiple data sources and further developing the conceptual site model, the groundwater model can be used for predicting the future impacts to receptors such as Las Vegas Wash under alternative remediation strategies and technologies. This provides a way of systematically comparing the relative effectiveness and timeframe of these alternatives in meeting remedial action objectives.

The focus of the modelling work in 2018 will be to incorporate new Phase 2 and Phase 3 RI data and to expand the capabilities of the model to include contaminant transport. The transport model will be used during the FS to predict the effect of remedial measures on mass discharge to Las Vegas Wash and remediation timeframes. The model will also be used to calculate the newly expanded performance metrics, as described in the NDEP-approved *RI Study Area Mass Estimate and Expanded Performance Metrics Technical Approach Technical Memorandum*, dated October 5, 2017, to evaluate the effectiveness of the existing groundwater extraction and treatment system and potential future remedial measures.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task and includes a rollover budget of \$425,000 to complete the remaining subtasks from the 2017 scope of work. No subtasks have been removed. Subtasks added, at the direction of the Trust, for implementation in 2018 are indicated in the bullets below. Consistent with prior discussions and meetings with NDEP, groundwater modeling efforts for 2018 are anticipated to include:

- Update the 3D Geological Model, as additional data becomes available, to incorporate borehole lithology and well construction data from subsurface investigations including the Phase 2 and Phase 3 RI, the Downgradient Study Area Investigation, and pilot tests and treatability studies.
- Develop animations for visualizing updates to the 3D Geological Model for presentation to NDEP and/or the stakeholders and update the Phase 5 transient flow model with the updates to the 3D Geological Model.
- Develop a fate and transport model (i.e., the Phase 6 model) for perchlorate using MT3D-USGS representing current conditions. The model will be based on Hydrus model results

and perchlorate data available in the NERT project database collected by Ramboll, Tetra Tech, AECOM, USGS, and other parties. The fate and transport model will be documented in a technical memorandum for submittal to NDEP. It is anticipated that the technical memorandum will be peer-reviewed by Tetra Tech concurrent with review by the Trust, prior to submittal to NDEP and the project stakeholders. It is understood that NDEP will request review of the technical memorandum by Dr. Greg M. Pohll of the Desert Research Institute (DRI).

- Use the transport model to calculate GWETS performance metrics for the 2018 Annual Remedial Performance Report, including mass flux across transects and mass discharge to Las Vegas Wash, as detailed in the *RI Study Area Mass Estimate and Expanded Performance Metrics Technical Approach Technical Memorandum* dated October 5, 2017.
- Prepare a presentation summarizing the Phase 6 model development and attend an in-person meeting with the Trust, NDEP, and the NERT Stakeholders in the second or third quarter of 2018 (*new subtask for 2018*).
- Address comments received from NDEP on the Phase 5 model (letter dated June 26, 2017) that were not part of the 2017 scope of work, including evaluating density effects on groundwater flow, reviewing permitted groundwater rights within the model area, and refining the approach to simulating concentrations in Las Vegas Wash (*new subtask for 2018*).

#### Assumptions:

- It is assumed that three Ramboll staff will travel to the Site once during 2018 for the in-person meeting with the Trust, NDEP, and the NERT Stakeholders as described above.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2018. Modeling performed to support the Annual Remedial Performance Report and Semi-Annual Remedial Performance Memorandum will be provided on the same schedule as these reports. One NDEP deliverable is anticipated:

- Fourth Quarter 2018: Phase 6 Model Documentation Report

Budget Information: This task includes a rollover budget of \$425,000 to complete the remaining subtasks from the 2017 scope of work and an additional budget of \$125,000 to complete the additional subtasks added to the scope of work in 2018. The estimated rollover budget of \$425,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2017. The total requested 2018 budget is \$550,000. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed within 2018 with no task specific rollover into 2019.

<b>M07 – Groundwater Modeling</b>				
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	Anticipated 2018 Rollover Budget	Requested Budget for Additional 2018 Scope	Total 2018 Requested Budget
\$700,000	\$275,000	\$425,000	\$125,000	\$550,000

## **M08 – RI Data Evaluation and Reporting**

Task Description: The scope of work for this task is a continuation of work begun in 2016 and continued in 2017. The scope developed at that time was focused on the data collected during the RI Phase 2 Field Investigation task. The RI Phase 2 work was intended to resolve data gaps identified in the *Remedial Investigation Data Evaluation Technical Memorandum* prepared by Ramboll Environ dated May 2, 2016 (RI Tech Memo) and was planned to be incorporated into a future RI report. Since 2015, the NERT RI Study Area was expanded to include the Eastside Study Area and the Downgradient Study Area. As part of the RI/FS Work Plan Addendum for the Phase 3 Remedial Investigation in the Eastside Study Area, the Trust proposed to organize the expanded NERT RI Study Area into three Operable Units (OUs) to allow for consistency of the Remedial Action Objectives (RAOs) within each OU. At this time, we anticipate there will be preparation of two RI Reports. The OU-1/OU-2 RI Report is scheduled to be submitted in the first quarter of 2019, and the OU-3 RI Report is scheduled to be submitted in first quarter 2020 although this schedule subject to change based upon US Bureau of Reclamation's review of AECOM's Environmental Assessment for the Downgradient Study Area. The scope of work for this task includes evaluation of data from all OUs; however, efforts in 2018 are anticipated to focus more on the evaluation of data from OU-1/OU-2 and the preparation of the OU-1/OU-2 RI Report.

The existing scope of work for the RI Phase 2 data evaluation task includes preparation of tables and figures for use in other concurrent efforts being implemented by the Trust such as GWETS evaluations and groundwater modeling efforts. It will include activities such as 1) analysis of the slug testing data, 2) preparation of data summary tables and preliminary data displays, and 3) preparation of preliminary subsurface cross-sections and updating existing cross-sections with the RI Phase 2 results. This RI Phase 2 data evaluation task will include an evaluation of the nature and extent of COPC impacts to groundwater in the Middle WBZ, both from Site-related COPCs and trespassing chemicals. Existing and new information on aquifer properties will be compiled that will include estimates of groundwater gradient, flow velocities, and an evaluation of vertical head differences at well cluster locations.

Rollover and Continuation of 2017 Subtasks: This scope of work is a continuation of the 2017 scope of work for this task. This task includes a rollover budget of \$167,000. No 2017 subtasks were removed. New subtasks for 2018 include:

- RI Phase 3 Data Evaluation and Reporting. Similar to the RI Phase 2 data evaluation, evaluation of the RI Phase 3 data will include activities such as 1) analysis of the slug testing data, 2) preparation of data summary tables and preliminary data displays, and 3) preparation of preliminary subsurface cross-sections and updating existing cross-sections with the RI Phase 3 results. This RI Phase 3 data evaluation task will include an evaluation of the nature and extent of COPCs in groundwater. Existing and new information on aquifer properties will be compiled that will include estimates of groundwater gradient, flow velocities, and an evaluation of vertical head differences at well cluster locations. (\$206,000)
- OU-1/OU-2 RI Report Preparation. This report will include 1) a comprehensive description of the area that comprises OU-1 and OU-2; 2) a brief Site history (including the NERT Site and the Eastside Sub-Area) and discussion of the origin of contamination to provide rationale for the characterization activities completed; 3) summaries of field investigations and relevant Site characterization data, including historical data used to support the CSM; 4) a synthesis of previous groundwater investigations that will also incorporate the results of additional work conducted for the RI; 5) an evaluation of Tetra Tech's Unit Building 4/5 investigation and integration into the RI report; and 6) an updated CSM for the Site, revised to incorporate additional information obtained through the RI process. (\$515,000)
- OU-3 RI Data Evaluation. Although preparation of the OU-3 RI Report is planned for 2019 following completion of the Downgradient Study Area investigation, investigation work has, or will be, conducted in other portions of OU-3 as part of the RI Phase 2 and RI Phase 3 investigations. The data developed in the NERT Offsite Study Area north of the AWF and in the Northeast Sub-Area during these investigations will be incorporated into area-wide interpretations, such as the updated top of the Upper Muddy Creek Formation structure contour map and COPC isoconcentration contour maps, when they are available. (\$47,000)
- Perchlorate and Chromium Mass Estimate. This scope of work includes preparation of a comprehensive mass estimate for perchlorate and chromium present in the NERT RI Study Area, including the Eastside and Downgradient Study Areas using the approach described in the *RI Study Area Mass Estimate and Expanded Performance Metrics Technical Approach Technical Memorandum*, dated October 5, 2017. (\$100,000)
- Coordination with Other Parties. The interpretations of subsurface conditions in the NERT RI Study Area will incorporate data developed by other parties and, to the extent feasible and appropriate, will need to be consistent with interpretations developed by others. This task will be focused in two areas: work conducted on behalf of the Trust, and work conducted for other BMI parties. In order to provide a consistent interpretation of subsurface conditions at the NERT Site, this task will include communications with Tetra Tech regarding their findings, particularly in the vicinity of Unit Buildings 4/5. Coordination with other BMI parties will likely include responding to comments provided

by OSSM related to encroaching VOCs on the west side of the NERT site and by Landwell/BRC related to interpretations within the Eastside Sub-Area. (\$37,000)

- Phase 1 RI DVSR / EDD Submittals. As directed by the Trust, effort to compile and submit to NDEP DVSRs and EDDs for the Phase 1 RI field investigation (in four separate submittals) was initiated in 2017 using unallocated existing budget; this effort will continue in 2018. This scope of work includes 1) reviewing DVSRs, generating EDDs, and submitting the DVSRs/EDDs to NDEP; and 2) addressing NDEP comments on each of the four Phase 1 DVSR/EDD submittals and submitting revised documents to NDEP. (\$75,000)
- Phase 2 RI DVSR / EDD Submittal. DVSRs and EDDs from the Phase 2 RI field investigation will be compiled, reviewed, and submitted to NDEP in 2018. This will include two phased submittals of Phase 2 soil and groundwater results, with the exception of data from Parcel F, which was submitted to NDEP in Fourth Quarter 2017. This task also includes responding to NDEP comments and submittal revised Phase 2 DVSR/EDD deliverables. (\$90,000)
- Phase 3 RI DVSR / EDD Submittal. A DVSR and EDD from the Phase 3 RI field investigation will be compiled, reviewed, and submitted to NDEP in 2018. This will include a single submittal of all Phase 3 soil and groundwater results. This task also includes responding to NDEP comments and submittal of a revised Phase 3 RI DVSR/EDD deliverable. (\$65,000)
- Soil Gas Sampling DVSR / EDD Submittal. A DVSR and EDD from the VI Evaluation, to be implemented under a separate task in 2018, will be compiled, reviewed, and submitted to NDEP in 2018. This will include a single submittal of soil vapor results. This task also includes responding to NDEP comments and submittal of a revised soil gas DVSR/EDD deliverable. (\$40,000)

#### Assumptions:

- The original task assumptions are provided in the October 31, 2016 scope of work provided to NDEP as part of the Trust's Budget Amendment 2016-02.
- With the exception of the DVSR/EDD submittals discussed above, no interim RI deliverables are planned.
- Separate reports will be prepared to present the analyses and results of the human health and ecological risk assessments, based on the updated CSM. These efforts are under Tasks M06A and M06B, respectively.
- For budgeting purposes, it is assumed that two Ramboll staff members will travel to the Site once during 2018 for this task.
- Since the scope of work for the Vapor Intrusion sampling field investigation (as described in Task M03) is unknown at this time, an accurate budget estimate for the DVSR / EDD submittal cannot be determined at this time. An order-of-magnitude estimated budget of

\$40,000 is included to perform this subtask; however, this budget estimate may need to be modified following preparation of the forthcoming RI Modification.

Anticipated Schedule: Work on this task has begun and will continue throughout 2018 and into 2020. Following submittal of the OU-1/OU-2 RI Report to NDEP in first quarter 2019, work will continue on data evaluation for inclusion in the future OU-3 RI Report. Deliverables to NDEP on this task are anticipated to include:

- First Quarter 2018: RI Modification (Vapor Intrusion Evaluation)
- First Quarter 2018: DVSRs/EDDs for the Phase 1 RI field investigation
- Second Quarter 2018: DVSRs/EDDs for the Phase 2 RI field investigation
- Third Quarter 2018: DVSR/EDD for the Phase 3 RI field investigation
- Third Quarter 2018: DVSR/EDD for the VI evaluation
- First Quarter 2019: OU-1/OU-2 RI Report

Budget Information: The estimated budget for this task is based on the effort required for subtasks in progress from 2017 (estimated rollover budget of \$167,000) and the additional subtasks identified above (estimated expanded scope budget of \$1,175,000). Based on this scope of work, the estimated total 2018 budget for this task is \$1,342,000. This budget estimate includes approximately \$61,000 for data validation subcontractor costs. No contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>M08 – RI Data Evaluation and Reporting</b>				
2017 Approved Budget	Anticipated 2017 Budget Used by 12/31/2017	Anticipated 2018 Rollover Budget	2018 Budget Requested for Expanded Scope	Total 2018 Budget Requested
\$386,000	\$219,000	\$167,000	\$1,175,000	\$1,342,000

## **005A – Cost Recovery and Allocation**

Task Description: As part of this task, Ramboll will provide consulting assistance to the Trust for the compilation of 2017 project costs related to the production of chlorate or perchlorate, to support the Trust's submittal to the United States Department of Defense (USDOD) of the Seventh Payment Demand for response costs pursuant to the 2006 Henderson Consent Decree and Substitution and Clarification Agreement. In addition, Ramboll will provide consulting assistance to the Trust for the response to USDOD questions and comments on the previously submitted payment demands, as required.

Comparison to 2017: This scope of work is similar to the 2017 scope of work for this task. No subtasks have been added or removed.

Assumptions:

- No travel is budgeted for this task.

Anticipated Schedule: Work on this task will proceed throughout the year. A draft of the compilation of 2017 project costs is anticipated to be provided to the Trust's legal counsel in the second quarter 2018 and revised and finalized in the third or fourth quarter 2018. There are no NDEP submittals anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$40,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2019, with a new scope of work and budget estimate to be developed for this task in 2019.

<b>O05A – Cost Recovery and Allocation</b>		
2017 Approved Budget*	Anticipated 2017 Budget Used by 12/31/2017*	2018 Budget Requested
\$40,000 *on task F06	\$6,000	\$40,000

### 3.1 Summary of New Budgets for Continuing Tasks

Table 3 below provides a summary of the new budgets for continuing tasks.

<b>TABLE 3: SUMMARY OF NEW BUDGETS FOR CONTINUING TASKS</b>				
<b>Task</b>	<b>Title</b>	<b>2017 Approved Budget</b>	<b>Anticipated 2017 Budget Used by 12/31/2017</b>	<b>2018 Requested Budget</b>
F03	Site Management Plan	\$34,000	\$12,000	\$34,000
F04	Consent Agreement Scheduling and Reporting	\$34,000	\$34,000	\$48,000
F05A	NDEP Relations	\$92,000	\$15,000	\$12,000
F05B	Stakeholder Relations	\$120,000	\$115,000	\$150,000
G01	Sale Parcel: HRAs	\$494,000	\$468,000	\$115,000
H04	Data Verification and Management	\$240,000	\$202,000	\$282,000
H05	Data Evaluation and Reporting	\$652,000	\$631,000	\$563,000

**TABLE 3: SUMMARY OF NEW BUDGETS FOR CONTINUING TASKS**

<b>Task</b>	<b>Title</b>	<b>2017 Approved Budget</b>	<b>Anticipated 2017 Budget Used by 12/31/2017</b>	<b>2018 Requested Budget</b>
H07	Monitoring Well Repairs	\$20,000	\$18,000	\$145,000
H08	Database Management, Maintenance, and Accessibility	\$282,000	\$235,000	\$262,000
J02	Permit Compliance and Reporting	\$168,000	\$115,000	\$143,000
J03	GWETS Data Management and Evaluation	\$126,000	\$91,000	\$118,000
L01	Community Involvement	\$60,000	\$26,000	\$70,000
L09	Weir Dewatering Treatment: NPDES Permit Compliance	\$29,000	\$26,000	\$48,000
M03	RI Phase 2 Field Investigation	\$7,331,000	\$6,081,000	\$1,596,000
M06A	BHRA Work Plan Implementation	\$173,000	\$173,000	\$590,000
M06B	Ecological Risk Assessment	\$45,000	\$14,000	\$156,000
M07	Groundwater Modeling	\$700,000	\$275,000	\$550,000
M08	RI Data Evaluation and Reporting	\$386,000	\$219,000	\$1,342,000
O05A	Cost Recovery and Allocation	\$40,000	\$6,000	\$40,000
<b>Totals</b>		<b>\$11,026,000</b>	<b>\$8,756,000</b>	<b>\$6,264,000</b>



## 4.0 New 2018 Tasks

This section provides the scope of work for new 2018 project tasks. The scopes of work and budget estimates for each task in this section are based on dialogue with NERT in support of various Trust objectives. Detailed budget estimates are provided in Section 5.0. Unless otherwise noted, it is assumed at this time that these new project tasks will not rollover into 2019. The 2019 scope of work and budget estimates will be prepared dependent upon future direction from the Trust.

Estimates of project task budgets and schedules provided herein assume budget authorization will be received from NDEP and the Trust by January 15, 2018. If budget authorization is received at a later date, project schedules will shift accordingly and in some cases, project budget estimates may need to be revised.

### M23 – Soil Background Concentration Study Implementation

Task Description: The *Soil Background Concentration Study Work Plan*, dated July 17, 2017 (the "Work Plan") was submitted to NDEP as the Remedial Investigation (RI) Modification No. 6 on July 18, 2017 and approved by NDEP on October 17, 2017. NDEP's letter indicated that they concurred with the proposed work for the background investigation of the fine-grained Upper Muddy Creek (UMCf-fg) unit; however, additional data for background concentrations in the alluvium is not needed. This scope of work includes implementation of the Work Plan, but only the sections of which pertain to collection and analysis of the background soil data for the UMCf-fg unit. This scope does not include collection and analysis of soil data from the alluvium. Details of the scope of work can be found in the Work Plan, which broadly includes the following:

- Locating of five (5) drilling locations, clearing the locations for the presence of utilities, and drilling soil borings at each location. Five soil borings will be located to the west of the AMPAC/Endeavour perchlorate plume to investigate the Upper Muddy Creek formation (~55-75 foot total depth).
- Collection of 40 samples from the investigation area (36 primary samples and 4 field duplicate samples).
- Sample analysis by Test America for metals and radionuclides and data validation by Laboratory Data Consultants.
- Management of analytical data and entry of boring log data into gINT.
- Data evaluation, including tabulated and graphical representations of exploratory and statistical analyses, will be summarized in a complete report, which will also include appended laboratory reports, boring logs, a data validation summary report, and an electronic data deliverable (EDD). The report will be provided to the Trust for review, revised to address Trust comments, and finalized for submittal to NDEP.

#### Assumptions:

- The scope of work will be performed as described in the *Soil Background Concentration Study Work Plan* dated July 17, 2017, which pertain to collection and analysis of the background soil data for the UMCf-fg unit. If additional modifications to the scope of work are required based on NDEP review comments, additional budget authorization may be requested.
- The UMCf-fg unit is present at the proposed boring locations.
- Soil contamination is not present at proposed boring locations and investigation derived waste is disposed of as nonhazardous waste.
- Access and permits for proposed boring locations can be obtained.
- All field work can be completed within 2 weeks (10 working days).

Anticipated Schedule: Work on this task is anticipated to begin within 30 days of obtaining property access for the investigation. One deliverable to NDEP on this task includes:

- Third Quarter 2018: Soil Background Concentration Study Report

Budget Information: Based on this scope of work, the estimated budget for this task is \$155,000, including anticipated utility locating, traffic control and surveyor subcontractor costs of \$6,000; drilling subcontractor costs of \$37,000; and analytical laboratory and data validation subcontractor costs of \$42,000. A 15% contingency has been added to the budget which will only be utilized upon Trust approval, for a total of \$178,000.

<b>M23 – Soil Background Concentration Study Implementation</b>
2018 Requested Budget
\$178,000

#### **M25 – AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation**

Task Description: This scope of work includes the implementation of the Athens Road Well Field Capture Evaluation and Matrix Diffusion Study Work Plan dated September 22, 2017, approved by NDEP on October 3, 2017. The objective of the scope of work is to investigate potential causes of persistently elevated perchlorate concentrations downgradient of the AWF through tracer testing and the evaluation of potential matrix diffusion.

The scope of work for this task includes: 1) mobilization for field activities; 2) field investigation activities including drilling, soil sampling, and monitoring well installation; 3) analytical laboratory testing, soil diffusion testing, soil physical property testing, and data management activities; and 4) data analysis and reporting of the results in the OU-1/OU-2 RI report.

The work plan provides details of the scope of work, but the major elements are as follows:

- Field investigation activities including drilling, monitoring well and piezometer installation, groundwater sampling, soil sampling and logging; collection of undisturbed soil cores for laboratory through-cell diffusion testing; tracer testing, slug testing and borehole dilution testing.
- Undisturbed UMCf soil samples will be sent to Dr. Batista's laboratory at the University of Nevada, Las Vegas. The through-cell diffusion test method will be used to estimate the effective diffusion coefficients of soil samples. Chemical and physical testing of soil and groundwater samples will be performed at Test America and PTS Labs.
- Analysis of the test results will provide estimates of hydraulic conductivity, groundwater velocities, vertical hydraulic gradients, vertical distribution of perchlorate, and effective diffusion coefficients. These estimates will be incorporated into a simple focused model of flow and transport that will be used to evaluate the causes of elevated perchlorate concentrations downgradient of the AWF.
- The results of the study will be provided in the OU-1/OU-2 RI Report.

Assumptions:

- Access and permits for proposed boring locations can be obtained.
- The scope of work includes data verification, validation and management efforts related to data obtained from the study.
- No separate report will be prepared since the results will be incorporated into the OU-1/OU-2 RI Report.

Anticipated Schedule: It is anticipated that the field mobilization and implementation will begin within 30 days following NDEP authorization of the budget for the study implementation, providing that all permits and access agreements, as appropriate, have been secured. An anticipated schedule for the study implementation was included in the work plan; however, for preliminary planning, it is anticipated that the study will be implemented over a period of approximately 37 weeks. The actual scheduling of the study implementation will be based on direction to Ramboll from the Trust.

Budget Information: Based on this scope of work, the estimated 2018 budget for this task is \$443,000 including subcontractor services and travel costs. A contingency of 15% has been added to the budget which will only be utilized upon Trust approval, for a total of \$509,000.

<b>M25 – AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation</b>
2018 Requested Budget
\$509,000

#### 4.1 Summary of New Budgets for New Tasks

Table 4 below provides a summary of the new budgets for new proposed tasks.

<b>TABLE 4: SUMMARY OF NEW BUDGETS FOR NEW TASKS</b>		
<b>Task</b>	<b>Title</b>	<b>2018 Requested Budget</b>
M23	Soil Background Concentration Study Implementation	\$178,000
M25	AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation	\$509,000
Total		\$687,000



## 5.0 Closing

Detailed budget estimates are provided in Attachment A.

We appreciate the opportunity to provide continued service to the Trust and look forward to working with you in 2018. Please let us know any questions or comments you have on this 2018 scope of work.

Yours sincerely,

**Kimberly Kuwabara, MS**  
Managing Consultant  
CEM #2353, expires 3/20/2019

**John M. Pekala, PG**  
Senior Managing Consultant  
CEM #2347, expires 9/20/2018

**Allan J. DeLorme, PE**  
Principal

## ATTACHMENTS

### Attachment A

2018 Task Budget Estimates



ATTACHMENT A  
2018 TASK BUDGET ESTIMATES

# PBI / Ex. 4

# PBI / Ex. 4



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